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Definitions of Loose Parts in Early Childhood Outdoor Classrooms: A Scoping Review

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ABSTRACT

Loose parts is often an ambiguous term with different interpretations depending on the context. Using the search parameters, a scoping review was implemented to narrow down over 2,400 articles related to "loose parts," "early childhood," and "outdoor classrooms" to 15 articles for in-depth review. From the selected research, a definition of loose parts in this context was formulated, a list of loose parts was extrapolated and analyzed, and descriptor words of the theory were discussed. A more uniform definition of loose parts potentially allows for more diverse application and use of this theory.

Keywords: loose parts, outdoor play, early childhood, outdoor classrooms

According to Nicholson (1971), the theory of loose parts is an opportunity for children to express creativity through use of materials that can be manipulated, transformed, and created through self-guided play. This type of active, outdoor free play allows children to lead their own inquiry, show creativity, and demonstrate understanding of various cognitive, social, and emotional skills (Ginsburg, 2007). Providing opportunities for children to actively play outdoors with their natural environment is important for healthy child development and increases the chance for children to take part in self-directed play in all environments, not just at home or school (Tremblay et al., 2015).

While Nicholson (1971) coined the idea of loose parts in the early 1970s, there has been little research to support an exact definition of what this is, what it entails, and how it is comprised. Houser, Roach, Stone, Turner, and Kirk (2016) argue that loose parts is an ambiguous term; however, they did share Nicholson's definition of loose parts as "materials that are variable, meaning they can be used in more than one way so that children can then experiment and invent through play" (p. 782). While many theorists and practitioners have shared their thoughts, ideas, and experiences, a cohesive delineation of loose parts play is lacking. The purpose of this research is to explore various definitions and theories of loose parts and construct a more unified definition within the context of outdoor classrooms.

Methods

For the purpose of this study, a scoping review was conducted. This type of review focuses on the amount of information that is available, rather than the quality of each article that was reviewed (Arksey & O'Malley, 2005). This research method is applicable when exploring the current span of literature available on a specific topic (Arksey & O'Malley, 2005).

To conduct the scoping review relating to loose parts, a literature review was conducted using the following databases: EBSCOhost, ProQuest, Google Scholar, and JSTOR. The key words used in this search were: "loose parts," "early childhood," and "outdoor classroom." To choose appropriate articles related to the research focus, inclusion criteria were established. The search criteria included current and relevant articles, from January 2008 through January 2018; full-text, peer reviewed; and a focus on children, outdoor settings, and loose parts. To narrow down the search, the articles needed to include children from birth to age eight, be in a formal educational setting (i.e. pre-school) and had to focus on outdoor settings. This set of criteria (see Figure 1) was created to make sure the articles best related to the purpose of the study.

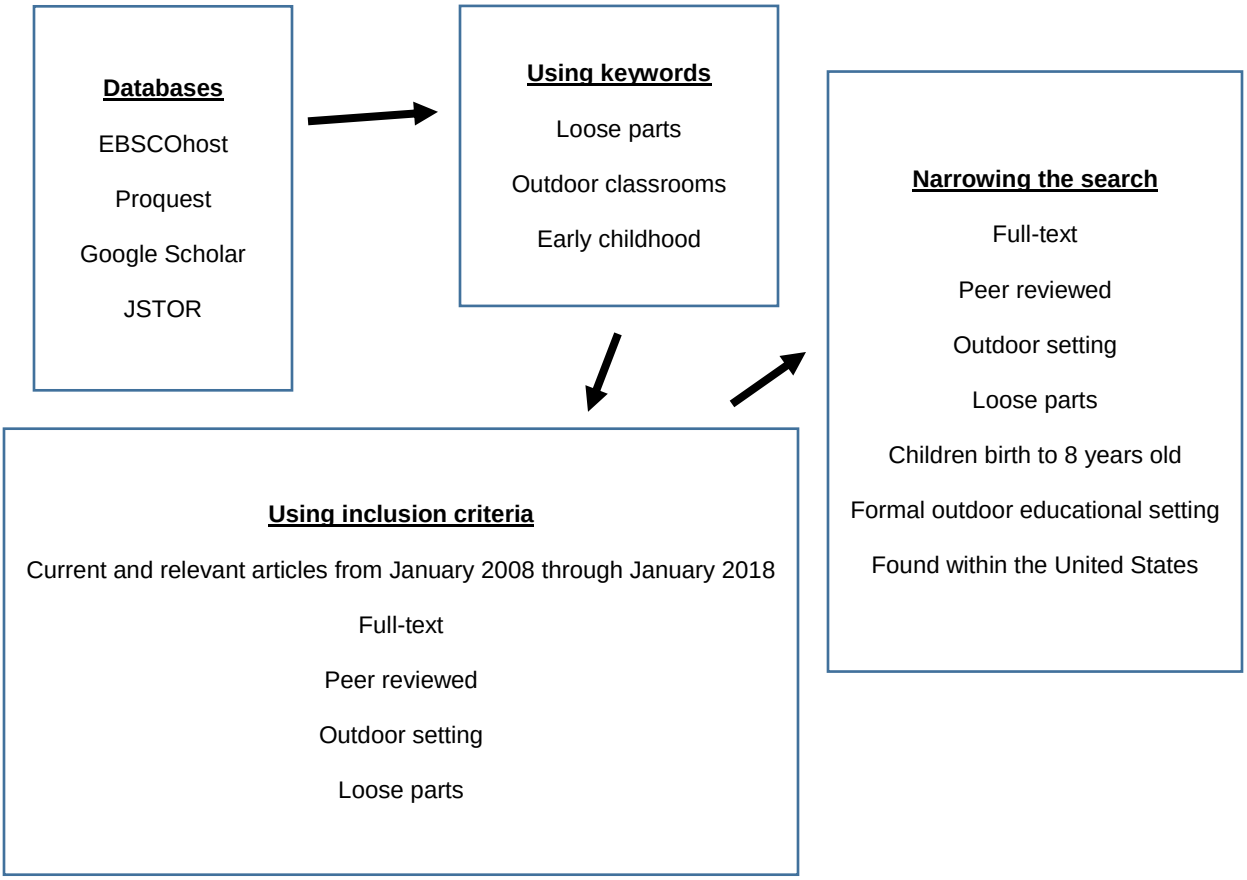

Figure 1. Process for scoping the literature. This figure represents the steps and inclusion criteria used to choose appropriate articles for the study.

Using the key words to conduct an initial search discovered that EBSCOhost yielded 2,198 results; Google Scholar had 104 articles; JSTOR contained 119 articles; and ProQuest had 2 articles. The combination of 2,423 articles were then evaluated for duplicates across databases, where a total of 552 articles were removed, leaving a total of 1,871 articles to review. The articles were then evaluated based on titles and keywords relating to descriptors of loose parts in outdoor early education classrooms, leaving a remainder of 143 articles, as 1,728 did not meet the specifications (Houser et al., 2016).

The researchers reviewed the abstracts in teams of two, reviewing each abstract for relevancy to the key word search. The 143 remaining articles were assessed using the information provided within the abstract to ensure it was relevant to the specific search criteria. During this review step, additional criteria was added, focusing on students in the United States. Eighty-three additional articles were removed, leaving 60 applicable articles. To

narrow down the amount of relevant information, 60 articles were analyzed using a full article review process (Houser et al., 2016).

Upon conducting the full article review, an additional 41 articles met the specific criteria. Left with 19 articles, the researchers evaluated these one more time using a full article review method, removing four additional articles to give the study a balanced assortment of articles and information. This study used a total of 15 peer-reviewed articles that were significantly related to the search criteria: loose parts, early childhood, outdoor classroom, and found within the United States. See Figure 2 for a breakdown of the search process using a PRISMA (2009) diagram.

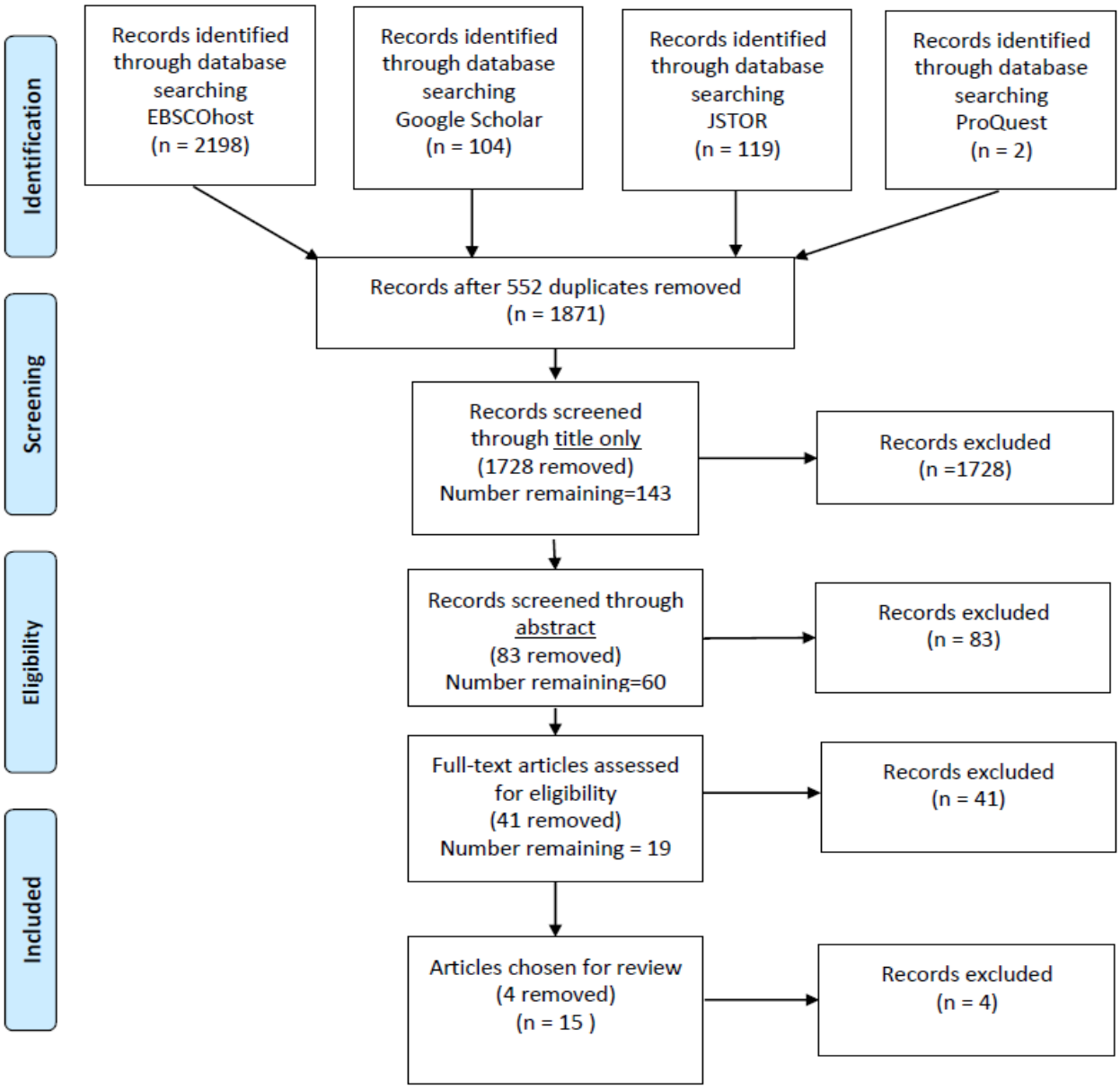

Figure 2. Article Search. This figure represents the breakdown of the search process using a PRISMA (2009) diagram.

Results

After the selection process, the 15 articles were thoroughly reviewed, noting the authors, type of document, methodology, summary of the work, definitions, and descriptors of loose parts. See Table 1 for a summary of results. While selected articles are all peer-reviewed, a variety of articles and publications are represented, such as articles intended for educators, research foundation publications, and dissertations. Various methodologies were included, such as single case qualitative studies, video-based fieldwork study, behavior mapping study, mixed methods approach, and an ethnographic study. Definitions varied, with some more detailed than others. Words that describe loose parts were also listed with words such as manipulative, materials, open-ended, props, and flexible included in many articles.

Table 1
Summary of Results

Author/ Publication	Methodology	Summary	Definitions	Descriptors
Bohling, Saarela, & Miller (2010) *Dimensions Educational Research Foundation*	Research foundation publication, Qualitative single case study	The purpose of this study was to investigate preschool children's skill development in a Nature Explore Classroom. Teachers collected data through close observation of children's outdoor play. Main research goals looked at how self-selected materials affected play, materials found exclusively outdoors, and teacher placed versus naturally occurring materials in the outdoor classroom.	"imagination and creative representation (Blizard & Schuster, 2004; Hart, 2002; Moore, 1989; Wilson, 2007)" (p. 3) "kinesthetic movement to gather and use materials, test physical limits, and carry out child-initiated play themes (Fjortoft, 2004; Lester & Maudsley; 2007; Wardle, 2000; Wilson, 2007)" (p. 3) "freedom for child-initiated activity and a smaller degree of adult control (Sutterby & Frost, 2006)" (p. 4) Lester and Maudsley (2007)…"The theory of 'loose parts' proposes that the possibilities for play, interaction, exploration and discovery, creativity, etc. may be directly related to the number and kinds of features in the environment" (p. 29).	Manipulative; action-oriented materials; alive, ever changing and renewing; green spaces; intentionally placed; naturally occurring materials; materials introduced; permanent features/ equipment
Carr, Douglas Brown, Schlembach, &	Scientific peer-reviewed journal,	Natural playscapes afford children executive function building opportunities through naturally rich play environments. Information	"playful interactions with natural loose parts and elements that afford engagement with both the	Nature-rich landscapes; purposefully planned;

Kochanowski (2017) *Children, Youth and Environments*	Video-based fieldwork study	was collected through videos and assessments to illustrate how children problem solve, set goals, self-regulate, and enhance other executive function skills.	natural environment and peers" (p. 26) "child-directed" (p. 26) "encourage children to take risks, explore, and investigate while engaging in active, sensory, collaborative, and dramatic play" (p. 26) "foster creativity, exploration, problem-solving, and more complex play scenarios" (p. 27)	create affordances; natural materials
Cloward Drown (2014) *All Graduate Theses and Dissertations*	Dissertation, Behavior mapping study	Preschoolers in natural and manufactured outdoor play settings were observed using behavior mapping techniques to look at play affordances. More complex dramatic play was observed in environments with play props, a natural setting, and a sense of enclosure.	"Nicholson's theory of loose parts states that exploration, creativity, and inventiveness are directly proportional to the variety in an environment (Nicholson, 1971)" (p. 20)	Manipulable parts; props; play props; substitute object; loose materials; junk yard playground; environmental yard; malleable organic material; malleable and flexible
Dennis, Wells, & Bishop (2014) *Children, Youth and Environments*	Scientific peer-reviewed journal, Post occupancy study	Hundreds of outdoor classrooms have been created using Nature Explore and the Outdoor Classroom Project guiding principles. The study investigated whether these outdoor spaces actually resulted in desired outcomes. Findings supported research on imaginative play, stewardship of the earth, and overall mental and physical health with recommendations for more successful environments.	"materials taken from nature, including wood, stone, plants, and water" (p. 36) "child-led exploration, and direct interaction with nature" (p. 36) "child-initiated experiences, open-ended play (Nature Explore 2014; Outdoor Classroom Project 2014)" (p. 37)	Natural, flexible, open-ended and renewable; open-ended materials, sensory materials (sensory richness); safe risks (jumping, digging, climbing), and rich, natural environment; play affordances; messy materials; play props (dramatic play); moveable

				space-making elements; flat surfaces; textures, colors, sounds; undifferentiated open areas; flexible spaces
Kiewra & Veselack (2016) *International Journal of Early Childhood Environmental Education*	Scientific peer-reviewed journal, Qualitative single case study	This study examined creativity in two outdoor classroom settings, sharing loose parts examples. Nature Notes were analyzed to reveal four key concepts that promote creativity in outdoor classrooms: "predictable spaces, ample and consistent time, open-ended materials, and caring, observant adults who support creative play and learning" (p. 71). Loose parts figure prominently in these spaces and analysis.	"Real open-ended materials that have no prescribed use seemed to support children's divergent thinking and therefore ingenuity. Our analysis shows that the non-standardization of the materials (really no two sticks are alike), the quantity of materials, and the freedom to combine materials were all important" (p. 85).	Affordances; open-ended materials; flexible thinking and wide-ranging play experiences; messing around; loose parts
Kuh, Ponte, & Chau (2013) *Children, Youth and Environments*	Scientific peer-reviewed journal, Mixed methods study	This study focused on how a change from traditional to natural playscapes can impact environmental affordances. The study explored the attraction and holding time between play types, role of loose parts, and the design of playscapes.	"loose, natural materials and children's creative explorations (Lester 2007; Nicholson 1971)." (p. 53)	Building materials, nature materials
Luken, Carr, & Brown (2011) *Children, Youth and Environments*	Scientific peer-reviewed journal, Field report	The Cincinnati Nature Center and the Arlitt Child and Family Research and Education Center at the University of Cincinnati partnered in 2008 to create the Nature Playscape Initiative (NPI). They evaluated low-income, preschool children enrolled in a Head Start program. The goal was to create natural playscapes to increase interest and learning in science.	"Playscape materials provide affordances, or opportunities to be touched, manipulated, dug, moved, picked, dammed, climbed, built, and experienced by children as they choose to do so." (p. 329)	Natural elements
Maxwell, Mitchell, & Evans (2008)	Scientific peer-reviewed	The study analyzed the methods in which the addition of loose parts to a playground	"'loose parts' (i.e., lumber, tires, large cardboard boxes, stackable blocks)	Play props, play materials, and manipulatives;

Children, Youth and Environments	journal, Multi- study research	contribute to constructive and dramatic play behaviors.	that children can use in ways related to play themes, thereby increasing constructive and dramatic play opportunities" (p. 39) "'Loose parts' refers to open-ended play materials and manipulatives that children can use in a variety of ways (Nicholson 1971)" (p. 39)	open-ended play materials (e.g., cardboard boxes, pipe cleaners, and pieces of cloth); well defined intended uses (e.g., tea sets, dolls, trucks, and tool kits)
Miller, Tichota, & White (2013) *Dimensions Educational Research Foundation*	Research foundation publication, Single case study	The study centered on creating natural outdoor classrooms describing features, native plants, etc. The research concluded that when children were engaged in outdoor play they were developing skills in a variety of domains simultaneously.	"creative and imaginative play that fosters the development of language and collaboration skills" (p. 9) "rich, multi-sensory learning experiences through their interactions with nature" (p. 18) "the open-ended nature of the materials available for children to explore; and the opportunity for children to engage in unstructured, child-initiated play" (p. 46) "the degree of creativity and inventiveness in any environment is directly proportional to the number of variables in it (Nicholson, p. 87)." (p. 51) "imperfectly perfect, filled with loose parts and possibilities (Louv, 2005, p. 97)" (p. 51)	Diverse, rich, natural; a variety of colors, shapes, smells, sizes and textures; intentionally placed/ selected; messy materials; availability; and versatile open-ended, natural materials; organic shapes
Monsalvatge, Long, & DiBello (2013) *Dimensions of Early Childhood*	Peer-reviewed journal, Article	This article focused on setting up an outdoor classroom, designating spaces for nature art, dramatic play, block building, etc. One important lesson from these experiences is to have a large supply of loose parts.	"grow and change as new ideas are implemented and new materials are acquired" (p. 27)	Materials; tinkering; props; loose parts

Sisson & Lash (2017) *YC Young Children*	Peer-reviewed journal, Article	The article studied three different outdoor environments in early childhood, sharing five essential aspects of outdoor time: "reflecting the local landscape, balancing risks and benefits, reconsidering time, materials, and space, introducing children's voices, and sustaining the natural learning environment" (p. 14). In "reconsidering time, materials, and space" (p. 14), loose parts are examined in more depth with suggestions on using these more fully in outdoor spaces.	Loose parts—"materials that can be moved, carried, combined, redesigned, lined up, and taken apart in multiple ways (Kable 2010)" (p. 13) "Loose parts have no directions for use and invite open-ended play with high levels of complex, unstructured, creative exploration (White & Stoecklin 1997; Keeler 2008; White 2014)." (p. 13) "The interactive properties of loose parts stimulate discovery, dramatic play, and imagination; they also attune children to their environments (White & Stoecklin 1997)." (p. 13)	Materials; interactive properties; open-ended; manipulate
Spencer & Wright (2014) *YC Young Children*	Peer-reviewed journal, Article	This article explored the Play Space Assessment, part of Head Start's push for more physical outdoor play. Key components of the assessment, sharing important elements such as natural elements, anchored play equipment, risk and challenge, wheeled toys, manipulative equipment, loose parts, trees for climbing, music and movement, etc. Manipulative equipment and loose parts are listed as two separate characteristics.	"manipulate materials and experiment" (p. 32)	Manipulative equipment; props
Stanley (2011) *Children, Youth and Environments*	Scientific peer-reviewed journal, Ethnographic case study	This study researched recess play values of children attending a lab preschool. The methods in which the children encountered outdoor elements through free play was investigated and expressed in interviews with teachers, administrators, and parents.	"treasures provided by our school grounds" (p. 186) "objects in the environment that are able to be freely moved and manipulated" (p. 206)	Manipulation and sensory stimulation of the elements, treasures, object, freely moved, manipulated

Veselack, Miller, & Cain-Chang (2015) *Dimensions Educational Research Foundation*	Research foundation publication, Qualitative study	This study considered the importance of children learning through outdoor play and connecting to nature. Four play yards were described and each one supported child-initiated experiences. Each day, the teachers brought out the equipment and play materials from storage sheds and classrooms, based on the children's needs. The teachers wrote Nature Notes that included observing children's skills using different materials found outside.	"Provide ample opportunities with a wide array of materials to encourage and provoke children in meaningful experiences" (p. 39)	Hands on manipulation of a variety of materials; open-ended materials; willingness to allow the materials to be used in unconventional ways; explore their surroundings; explore, experiment, and engage with materials; "Physically manipulate objects of a variety of shapes, colors, sizes; to physically experience concepts of area, volume, diameter, depth, and length; to create patterns and sequences and explore rhythm and speed; to experience quantity and to use numbers" (p. 41)
Wirth & Rosenow (2012) *YC Young Children*	Peer-reviewed journal, Article	This article presented an overview of how to create an outdoor classroom in accordance with the Nature Explore Outdoor Classroom approach, including nature, defined spaces, native plants, and variety of features.	"Experiment with concepts of size, scale, weight, and balance; move hands and bodies through space to manipulate objects; and work cooperatively on a shared plan" (Bohling, Saarela, & Miller, 2010, 3) (p. 44)	Manipulate objects, experiment

Table 2 outlines specific loose parts found in the articles listed in Table 1. The researchers extracted items listed as loose parts from each article and compiled them into one list, categorizing by natural or manufactured loose parts. Trees are prevalent in the natural loose parts options, including the whole tree as a loose part, branches, seeds, twigs, bark, wood, and other bits and pieces. Other plants such as shrubs, bamboo poles, pumpkins, and flowers were often used as loose parts. Rocks, soil, and water in various states and combinations were noted. Additional living things, such as worms, bugs, and the children's own bodies, were also noted.

In manufactured items, tools such as cameras, garden tools, magnifying glasses, and clips became part of the loose parts experience. Many loose parts were used to facilitate building, such as various types of blocks, wooden or plastic milk crates, and bricks, though these same items could be used for other purposes. Dramatic play items took the form of fabric, medical kits and props, dress up play, and cooking items. Items that beget movement included bean bags, balls, scarves, hoops, exercise ball, and tubes. Toys were also included as loose parts such as a car, trucks, dolls, and play props.

Table 2
Detailed list of loose parts mentioned in selected articles

Natural		Manufactured	
Acorns	Plants	Balls/Rubber ball	Mailbox
Bamboo poles	Pumpkins	Bamboo blocks	Mats
Bark	Recycled	Bean bags	Measuring cups
Berries	evergreen	Bench	Metal cake pan
Boulders	(Christmas) trees	Bottles	Milk crates
Bulbs	Reeds	Bowls	Mini-bricks
Bushes	River rocks	Brick structures	Muffin tin
Clay	Rocks/rock piles	Bricks	Musical instruments
Corn (cobs, kernels, and ears)	Roly poly bugs	Buckets	Old clothes
Cornhusks	Rose quartz	Building blocks	Paint
Dirt	Sand/sand pits	Building materials	Pans
Driftwood	Seed pods	Cameras	Paper
Feathers	Seeds	Cardboard boxes	Paper and pens/pencils
Flat stones	Shells	Cardboard tubes	Pipe cleaners
Flower and herb gardens	Snow	Cars	Pipes
Flowers	Soil	Ceramic tiles	Planks
Frozen snow	Spiky seed pods	Chalk	Plastic bat
Grass	Squash	Climbing structure	Plastic cones
Grassy hills	Sticks	Clips	Plastic plates
Heavy wood pieces	Stones	Colorful blocks	Plastic playhouse
Hedge apples	Stream	Containers/small containers	Plastic shovels
Ice	Stumps	Costumes	Pots
Insects	Sweet gum pods	Dramatic play props	Pottery
Large tree branches	Their own body	Empty plant pots	Raised garden bed
Large wooden chunks	Tree blocks	Empty plastic sandbox	Ramps
Leaves	Tree cookies	Fabrics/Large fabrics	Scarves
Living things	Tree limbs	Foam building blocks	Scoop
Logs	Tree branches	Garbage can and lids	Shovels
Loose gravel	Trees	Garden hand tools	Simple toys
Lumber	Twigs	Gutter	String
Mud	Vegetation	Hand-held instruments	Sunglasses
Mud pies	Water	High structure toys (telephone,	Tables
Native grasses	Wildlife	medical kit, trucks, dolls)	Tire
Native plants	Willow branches	Hoe	Trucks

Natural blocks	Wood chips	Hoops	Tubes
Palm fronds	Wood mulch	Hose	Waffle blocks
Pebbles	Worms	Large exercise ball	Water basin
Pine branches		Large plastic barrels	Wheels
Pinecone needles		Low brick wall	Wooden blocks
Pinecones		Magnet blocks	Wooden crates
Plant parts		Magnifying glasses	Wooden or metal spoons

The words in the *descriptors* column in Table 1 were used to create a word cloud, which is a distribution analysis of the words used. See Figure 3 for these words, with the most used words as larger size than other words, descending in size with frequency used. The word cloud is a visual representation of how these words are used as descriptors of loose parts in the collective articles, with materials, open-ended, props, natural, and manipulative being used more frequently.

Figure 3. Loose parts word cloud. This figure is a text analysis of the words used as descriptors of loose parts.

Discussion

While definitions of loose parts varied slightly throughout the chosen articles, the definitions focused on manipulating, experimenting, and interacting with a variety of objects for promoting imagination and creativity. Natural loose parts offer more variability due to property changes and seasonality. Verbs used in definitions and descriptions are important elements in defining the theory of loose parts. Some loose parts included in the article were surprising yet fit the definitions of loose parts and expand understanding of the concept. When looking at this definition, types of loose parts, terminology, the impact of nature, and mindsets are important to note. Reviewing the definitions in the selected articles focusing on outdoor classrooms in early childhood settings using loose parts in the United States, the authors synthesized the definitions into one cohesive definition applicable in many settings and inclusive of many approaches to loose parts (see Figure 4).

Loose parts are open-ended, interactive, natural and manufactured materials that can be manipulated with limitless possibilities. Interaction with loose parts includes experimentation, exploration, and playful interactions with variables through creativity and imagination. Children have the freedom to explore variables, combine materials, and react to complex themes and ideas that emerge in the outdoor classroom setting. Adults encourage children, make loose parts available, stimulate discovery, provide opportunities, allow for open-ended play, and prompt meaningful connections and experiences. Through loose parts exploration children develop imagination, creativity, and collaborative skills. Process is more important than the end product fostering overall growth and development.

Figure 4. Loose parts definition in early childhood outdoor classrooms. This definition is a result of the scoping review.

In other literature, Houser et al. (2016) defined loose parts as adaptable and active, appropriate for the supplies themselves. Objects can be implemented as tools for play and discovery as long as these are age appropriate and made available. Sutton (2011) created a working definition, arguing that loose parts are part of a collection of moveable materials, inspiring a child to use them and repurpose them to fit his or her personal needs. Loose parts can be of any size and require different levels of strength to use them. The hand and mind, however, must work together to promote inquiry (Sutton, 2011). Loose parts are intended to encourage children to be open-minded while interacting with the surrounding environment. This type of play assists children in creating associations between learning and fun (Sutton, 2011).

Cloward Drown (2014) restated this definition by sharing, "Child-scale constructive and small-scale accessory 'loose parts,' and non-prescriptive surroundings afford more complex dramatic play" and advocates for some manufactured settings and play props as part of loose parts in outdoor settings (p. 60).

Many manufactured loose parts were mentioned in the articles reviewed, including tools, various building materials, dramatic props, and even simple or structured toys. Maxwell et al. (2008) noted more varied and engaged play in settings with manufactured loose parts rather than no loose parts. Kiewra and Veselack (2016) emphasized the idea that natural items that can be anything. Some natural items may suggest something specific; however, children are encouraged to be innovative and use these in unique ways, fitting to personal needs and interests. Closed-ended, or materials requiring specific use leaves little room for imagination and originality (Kiewra & Veselack, 2016). Cloward Drown (2016) reiterated the dynamic seasonal and other changes of nature arguing that seasonal shifts on a traditional playground can pose limits for children to specific types of events; however, a playground with dirt that turns to mud or deciduous shrubs that turn red in the fall allows for more inventiveness. Veselack et al. (2015) also mentioned the importance of natural loose parts for infants and toddlers stating, "Children stayed with self-selected activities and explored elements of nature demonstrating both an ability to focus and attend as well as showing curiosity that held their attention and supported their engagements" (p. 35).

Some loose parts listed were unexpected based on initial definitions. Table 2 lists a low brick wall, raised garden beds, trees, and a plastic playset as loose parts, which are typically not moveable. However, it is another variable in the environment. In using loose parts materials in a museum with an outdoor play setting, Sutton (2011) expanded

her initial definition noting that the more access to loose parts a child has, the more broad his or her mind becomes. Children are allowed to view and use the entire earth surrounding them as a canvas. Loose parts are examined and evaluated for potential use and assessed based upon attributes such as color, qualities, shape, and ease of use (Sutton, 2011).

In situations like this, the whole environment becomes part of the variables and options available as loose parts, in accordance with the theory of affordances. "An affordance can be thought of as an 'action possibility' for an individual in relation to the environment, dependent on that individual's capabilities" (Stanley, 2011, p. 189). Stanley (2011) additionally defined this as "the direct manipulation and sensory stimulation of the elements that he perceives as affordances" (p. 191).

Natural loose parts were clearly preferred in some settings. Kiewra and Veselack (2016) challenged the value of toys and premade props in play, preferring that loose parts such as sticks, logs, snow, and sand can be repurposed into anything that a child wants these to be. The authors also provided an example of the changing and unpredictable aspects of nature allowing for different experiences as a pumpkin froze or snow becomes ingredients in recipes, stating, "This element of unpredictability brought forward opportunities for children to engage in problem-solving, ingenuity and flexible thinking" (Kiewra & Veselack, 2016, p. 80). They also recorded 23 or more plants or plant parts as part of play. Living plants seem to be the most useful when it comes to play because they create things such as pinecones, acorns, and leaves. This type of environment allows children to use the dirt, sand, grass, mulch, and ground to transform the environment into something different. The next most used materials were parts of the trees, such as twigs, branches, logs, bark, and stumps. Table 2 lists many plant products as well, with trees and tree parts a large component of outdoor loose parts exploration.

While many of the manipulable items center on a wide range of natural items; manufactured metal, plastic, and wood loose parts; highly structured dramatic play items; and child-made and man-made tools; it is curious to note the inclusion of living things, children's own bodies, and roly poly bugs as loose parts in Table 2. Ultimately, the way these are used can be moveable variables in the environment. Monsalvatge et al. (2013) mentioned the changing nature, variety, and unpredictability of outdoor settings stating, "Whether there are seasonal changes to note, animals and insects to study or gardens to be tended to--nature is the best teacher!" (p. 29). Kuh et al. (2013) argued the proximity of play spaces near nature is critical, and purposefully arranging items within the natural environment allows children to form a stronger bond and connection with these materials during play. Natural items can be many things as in this example by Monsalvatge et al. (2013), with natural items such as leaves, rocks, sticks, and berries becoming paint brushes and paint. The same materials might transform into a collage or props for dramatic play with a children's book.

Verbs are an important concept within loose parts. Wirth and Rosenow (2014) shared an example of how using loose parts as part of play develops many domains sharing an example of making a castle by using words to communicate and show perspectives, experiment with materials, manipulate materials with their bodies, and work together on a shared vision. The example illustrated play as complex with constructing, sharing, experimenting, moving, manipulating objects, and working cooperatively. Similarly, Nicholson's (1971) original theory also shared the complexity of the concept of loose parts as evidenced in the verbs used in his theory. Gull (2017) listed the verbs from the theory as "build, construct, play, experiment, invent, explore, discover, evaluate, modify, study, think, consider, measure, draw, model-making, calculate, destruct, slide, fold, hide, paint, and bounce" (para. 24). Kiewra and Veselack (2016) observed similar and expanded actions with loose parts, relating the ability to "explore their process, to problem solve together, to negotiate and debate and to have support from a caring adult. They were able to work, rework, consider, test, posit theories and discover" (p. 83). Manipulate, climb, build, experience, explore, engage, dig, touch, experiment, work, carry, combine, play, redesign, and other verbs are listed as part of the definitions in Table 1.

Figure 3 looked at descriptors of loose parts from the articles selected in the scoping review, noting many verbs and broader terms of the theory of loose parts. While the term *open-ended* has been prominently shared in the articles, Gull (2017) reported an absence of the terms "child-led, unstructured, open-ended" in Nicholson's work (para. 25). Gull (2017) noted Nicholson used descriptors such as "variables, loose parts, playing around, self-instructional"

(para. 23). Open-ended opportunities may certainly be a part of defining loose parts, but may not be a limiting factor as discussed with the inclusion of loose parts that may not be as open-ended such as dramatic play props and structured toys in Table 2, leaving greater opportunity to see loose parts from many angles. Alternatively, some materials may be more open-ended than generally thought; however, when using a loose parts mindset approach, things like the low brick wall or human body which may not be considered open-ended traditionally can be used in many different ways.

Limitations and Future Recommendations

Limitations of this study include the search article criteria and the search terms established for the scoping review. For the purposes of this study, the search terms of "loose parts," "early childhood," and "outdoor classrooms" were used. Using a larger variety of search term synonyms and looking in different environments may have yielded different results. The theory of loose parts has many applications beyond this research; however, using the search criteria included current and relevant articles, from January 2008 through January 2018; full-text and peer reviewed. This set of search criteria were created to select the articles best related to the purpose of the study; however, these restrictions potentially limit the application of loose parts (see Figure 1). Different search article criteria and search terms are recommended for future studies.

A clearer definition of loose parts can be helpful for early practitioners trying to implement loose parts more fully, while still allowing for the larger context of the theory which allows for a more robust interpretation as it is implemented. As Gull (2017), the founder and moderator of the largest online social media group focusing on the discussion of loose parts, notices:

> Educators often come to the Loose Parts Play Facebook group thinking they must get rid of all their plastic dramatic play toys and replace them with tree cookies, acorn caps, and sticks. While that could be one application of the theory of loose parts, the possibilities are really limitless. We do a disservice to our educators and children when we have a narrowly defined view of loose parts that doesn't include the mindset of being able to use materials and the environment in unique ways as part of play and learning. A better definition that educators can easily understand may include the natural bits and pieces, plastic dramatic play, and the whole environment as part of the loose parts, basically variables, and allows for a fuller application of this powerful principle to promote creativity and imagination. (C. Gull, personal communication, March 14, 2018)

Ultimately, sharing a better definition with larger application of loose parts in early childhood outdoor classrooms and other settings with the educators and parents working with the children will be helpful for a wider range of loose parts experiences and developing a loose parts mindset. Exploring how to best share this definition and implications could help with effectiveness of implementation.

By removing limitations of child/adults and the place setting of an outdoor classroom, the definition derived from the scoping review may have even broader applications to any setting where loose parts are implemented, such as senior centers, creativity exploration for adults, etc. (see Figure 5).

Future studies may test this more generalized definition in various applications to see if this same definition could apply in indoor settings, with different ages and stages, and with various educational philosophies and approaches within the context of loose parts.

Loose parts are open-ended, interactive, natural and manufactured materials that can be manipulated with limitless possibilities. Interaction with loose parts includes experimentation, exploration, and playful interactions with variables through creativity and imagination. Participants have the freedom to explore variables, combine materials, and react to complex themes and ideas that emerge. Facilitators encourage participants, make loose parts available, stimulate discovery, provide opportunities, allow for open-ended play, and prompt meaningful connections and experiences. Through loose parts exploration participants develop imagination, creativity, and collaborative skills. Process is more important than the end product fostering overall growth and development.

Figure 5. Loose parts universal definition. This definition is a result of the scoping review.

Conclusion

Defining loose parts more specifically allows for greater implementation and deeper conversations and professional development around the topic. This scoping review narrowed down over 2,400 articles connected to "loose parts," "early childhood," and "outdoor classrooms" that met the study requirements, selecting 15 articles for thorough review and analysis. A definition of loose parts was created, loose parts from the research were categorized as natural or manufactured, and words describing loose parts were analyzed.

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